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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,848	02/02/2006	Hao Li	4-32776A	8615

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EAST HANOVER, NJ 07936-1080

EXAMINER

LONG, SCOTT

ART UNIT	PAPER NUMBER
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1633

MAIL DATE	DELIVERY MODE
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11/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,848	Applicant(s) LI, HAO	
	Examiner Scott D. Long	Art Unit 1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/23/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-57 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The examiner hereby vacates the previous restriction. A new Election/Restriction is required.

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claims 1-18, 40-49, drawn to a method to treatment, prevent, ameliorate pathological conditions associated with dysregulation of the insulin signaling pathway comprising administering to a subject in need thereof an effective amount of a modulator of a protein selected from the group consisting of those disclosed in Table 4 or Table 5, classified in class 536, subclass 23.1 and class 424, subclass 130.1.

If group I is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

Group II, claim(s) 19-28, drawn to a method to identify modulators useful to treat, prevent, ameliorate pathological conditions associated with dysregulation of the insulin signaling pathway comprising assaying for the ability of a candidate modulator (1) to modulate the biochemical function of a protein (claims 19-23) or (2) to modulate the gene expression of a protein (claims 24-29) selected from the group consisting of those disclosed in Table 4 or Table 5, classified in class 536, subclass 23.1 and class 424, subclass 130.1.

If group II is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

Art Unit: 1633

Group III, claim(s) 29-37, drawn to a pharmaceutical composition comprising modulator to a protein selected from the group consisting of those disclosed in Table 4 or Table 5, class 424, subclass 130.1.

If group III is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

Group IV, claim(s) 38, drawn to method to diagnose with modulators of mRNA of a protein selected from the group consisting of those disclosed in Table 4 or Table 5, classified in class 536, subclass 23.1

If group IV is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

Group V, claim(s) 39, drawn to method to diagnose with protein modulators of a protein selected from the group consisting of those disclosed in Table 4 or Table 5, classified in class 424, subclass 130.1.

If group V is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

Group VI, claim(s) 50, drawn to a diagnostic kit for detecting mRNA levels of a protein selected from the group consisting of those disclosed in Table 4 or Table 5 and administering controls, classified in class 536, subclass 23.1.

If group VI is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

Groups VII, claim(s) 51, drawn to a diagnostic kit for detecting protein levels of a protein selected from the group consisting of those disclosed in Table 4 or Table 5 and administering controls, classified in class 424, subclass 130.1.

If group VII is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

Groups VIII, claim(s) 52-57, drawn to method to method to identify genetic modifiers of the insulin signaling pathway comprising use of transgenic flies, classified in class 800, subclass 3.

If group VIII is elected, the applicant must further elect a species of protein found in table 4 or table 5. This species election requires selection of a single protein.

The inventions listed as Groups I-VIII do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical feature for the following reasons:

37 CFR 1.475(c) states:

"If an application contains claims to more or less than one of the combinations of categories of invention set forth in paragraph (b) of this section, unity of invention might not be present."

37 CFR 1.47(d) also states:

"If multiple products, processes of manufacture, or uses are claimed, the first invention of the category first mentioned in the claims of the application and the first recited invention of each of the other categories related thereto will be considered as the main invention in the claims, see PCT article 17(3)(a) and 1.476(c)."

In the instant application, Groups II, IV, V, and VIII constitute additional methods distinct from Group I. Groups III, VI and VII constitute additional products distinct from Group I. Accordingly, restriction of Groups I-VIII is proper.

The technical feature of Group I is drawn to a method to treatment, prevent, ameliorate pathological conditions associated with dysregulation of the insulin signaling pathway comprising administering to a subject in need thereof an effective amount of a modulator of (species) FMR2 protein. Methods of treatment require different steps from methods of screening, for example, "assaying.". The method of treatment which comprises administering a modulator of FMR2 which is structurally and materially distinct from modulators of other species in Table 4 or 5, further demonstrating the physical distinctness of the modulators in these methods. A search for methods of treating a subject with modulators of FMR2 (group I-species1) would not be co-

Art Unit: 1633

extensive with a search for methods of identifying modulators of nucleoside diphosphatase (EU-UDPase) (group I-species2), for example. Further, a reference rendering *FMR2* as anticipated or obvious over the prior art would not necessarily also render nucleoside diphosphatase (EU-UDPase) as anticipated or obvious over the prior art. Thus, a search and examination of anything beyond any of the groups as set forth above would be unduly burdensome to the examiner.

Species Election

Should Applicant elect any of Inventions I-VIII, a species election is required under 35 U.S.C. 121 and 372. This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Each Invention detailed above reads on patentably distinct inventive groups drawn to various methods and pharmaceutical compositions. According to PCT Rule 13.2 and to the guidelines in Section (f)(i)(A) of Annex B of the PCT Administrative Instructions, all alternatives of a Markush Group must have a common property or activity. The proteins recited in Tables 4 or 5, do not have a common structure in that they comprise various enzymes with different functions and structures, because of this, the methods of screening would not be distinct for each member recited in Tables 4 or 5, because the proteins do not share a common property or activity. The proteins in

Art Unit: 1633

Tables 4 or 5, do not share a common core structure or function, thus the inventions are patentably distinct.

In response to the species election requirement, **Applicant must elect a single protein listed in Table 4 or Table 5.**

Response Requirement

2. Applicant is advised that the reply to this requirement to be complete must include (i) an election of an invention to be examined even though the requirement be traversed (37 CFR.1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Both a group and species election are required to be fully responsive to this action.

Examiner Contact Information

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Long** whose telephone number is **571-272-9048**.

The examiner can normally be reached on Monday - Friday, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Joseph Woitach**, can be reached on **571-272-0739**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott Long
Patent Examiner
Art Unit 1633

/Janet L. Epps-Ford/
Primary Examiner
Art Unit 1633

JLE